GRIZZLY

Army ACAT II Program

Total Number of Systems:	366
Total Program Cost (TY$):	$3,108M
Average Unit Cost (TY$):	$7.4M
Full-rate production:	1QFY03

Prime Contractor

United Defense Limited Partnership (UDLP)

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2020

The Grizzly is an armored vehicle that provides an in-stride capability to overcome simple and complex linear obstacles. The system is designed to breach obstacles, including mines, rubble, berms, wires, and ditches to create a safe lane for other vehicles in the maneuver force. The Army currently has no other system with these capabilities. The Grizzly will be fielded in division and selected corps engineer battalions, and supports the ***Army Vision 2020*** concepts of ***protect the force*** and ***decisive operations***.

The Army based the Grizzly design on the Abrams M1 chassis, equipped with a full-width, mine-clearing blade, and a power-driven excavating arm. While buttoned up, a crew of two should be able to operate all sub-systems. The vehicle contains electric drives, an advanced open system vehicle electronic architecture, automatic depth control for the mine clearing blade, and provisions for digital battlefield command and control.

BACKGROUND INFORMATION

The Army's Acquisition Executive notified OSD that the Army designated the Grizzly program as an ACAT II program and a covered system for LFT&E in a memorandum dated June 4, 1996. The Grizzly was added to the FY97 Annual T&E Oversight List for LFT&E only.

The Grizzly program was initiated in FY92 as a result of lessons learned during Operation Desert Storm. The Army leveraged the work conducted under an Advanced Technology Demonstration Program. A sole-source contract was awarded to United Defense Limited Partnership in September 1992 for DEM/VAL. Prototypes were delivered in 4QFY95. Early user experiments were conducted in February 1996, and a blade performance testing using automatic depth control was completed in November 1996. The program Milestone II decision was made in December 1996, and the program proceeded through the design maturation phase of EMD in 1999.

TEST & EVALUATION ACTIVITY

As the Grizzly proceeded through the design maturation phase of EMD, T&E activity focused on the emerging configuration of the vehicle and its sub-systems, as well as the scope of T&E required to assess the system's overall effectiveness, suitability, and survivability.

Production Qualification Test Phase-I (PQT-I) began in FY98, with tests to support design decisions for the Grizzly automatic fire suppression system (AFSS). These tests utilized a full-scale mock-up of the Grizzly sub-floor compartment and internal components to evaluate AFSS effectiveness at preventing or suppressing fire and explosion after the vehicle is hit by a threat weapon. The tests also supported nozzle design and placement decisions.

PQT-I continued in FY99, with live fire tests of a full-scale Grizzly Ballistic System Structure (BSS) replicating the Grizzly hull, crew station, and mine clearing blade. BSS test objectives included demonstration of the suitability of armor designs, hatches, vision devices, shielding for exposed hydraulics and electronics, and fabrication techniques. Ballistic threats tested between April-July 1999 included small arms, rocket-propelled grenades, kinetic energy projectiles, anti-tank guided missiles, direct-fire high-explosive projectiles, mines, and fragmenting artillery shells. The selected threats addressed system requirements and explored the ballistic limits of the Grizzly design.

Following the program budget decision in December 1999 that designated Grizzly for termination, the Army conducted limited mine-clearing performance testing of two EMD prototypes. No further live fire testing was conducted during FY00. Minimal contractor and program office work continues while awaiting final program disposition. The Army Engineering School is exploring courses of action to address assault gap breaching requirements without Grizzly.

Although the Army has described the Grizzly as one of its principal unfunded requirements, it has not designated the Grizzly for future funding in the Army program objective memorandum for FY02-FY07. Final defense authorization and appropriation bills provided no further FY01 funding.

TEST & EVALUATION ASSESSMENT

The FY99 Grizzly BSS live fire test generally demonstrated resistance to penetration and overall structural integrity of the fabricated armor shell, and met multi-hit requirements. Observed vulnerabilities of specific components initiated design reviews to explore fixes or alternative designs.

CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNED

The BSS test revealed specific vulnerabilities of external cables, hydraulic lines, the tactical depth sensor, and external video cameras for crew visibility. Contractor and government engineers were to consider possible solutions to the observed vulnerabilities. If the Grizzly program is re-established, such design efforts should build upon the test, evaluation, and related design work accomplished to date.